DOE News Release
FOR IMMEDIATE RELEASE
June 17, 2005

NEWS MEDIA CONTACTS:
Reuel Smith, (208) 526-3733, (208) 521-4910; Reuel.Smith@inl.gov

DOE completes testing of 100 percent hydrogen-fueled internal combustion engine vehicle converted by Electric Transportation Engineering Corporation (eTec)

The U.S. Department of Energy, through its Advanced Vehicle Testing Activity, has completed baseline performance testing of a 2003 Ford pickup converted by Electric Transportation Engineering Corporation (eTec) to run 100 percent hydrogen fuel in its internal combustion engine (ICE). Testing was conducted in Phoenix, Ariz.

The baseline performance testing included: range, acceleration, top speed, braking, handling, gradeability and fuel economy. Three types of fuel economy tests were performed, including two drive cycle tests (conducted in accordance with SAE J1634) with and without the air conditioning on as well as testing at a constant speed of 45 mph. The hydrogen-fueled pickup uses three Dynetek fuel storage tanks at a nominal pressure of 2,900 psi to store 6.52 gasoline gallon equivalents (GGE) of 100 percent hydrogen. The results for the three baseline performance fuel economy tests and the range for the pickup (based on 6.52 GGE of onboard 100 percent hydrogen storage) are:

- Drive cycle with air conditioning on: 14.5 miles per GGE and 94.5 miles
- Drive cycle with air conditioning off: 18.0 miles per GGE and 117.4 miles
- Constant 45 mph speed: 27.0 miles per GGE and 176.0 miles

Other baseline performance testing results include a maximum speed of 58 mph in a quarter mile and 81 mph at one mile, with an acceleration time to 50 mph of 18 seconds.

The vehicle features a 16-valve, 5.4-liter V-8 engine, supercharger, fuel injection and manual transmission, as well as the usual features such as cruise control, air conditioning and dual air bags. The payload is 1,365 pounds.

The vehicle has started fleet testing and it is averaging 17.2 miles per GGE after the first 2,800 miles.

These elements of the Advanced Vehicle Testing Activity are managed for the DOE Office of Energy Efficiency and Renewable Energy from Idaho National Laboratory in Idaho Falls, Idaho.

A baseline performance testing fact sheet, as well as additional information on other hydrogen and compressed natural gas vehicle testing, and the Alternative Fuel (Hydrogen) Pilot Plant can be found at http://avt.inl.gov/hydrogen.html. The testing specifications and procedures also can be found at this location.

DOE, through its Advanced Vehicle Testing Activity, conducts Accelerated Reliability and Fleet testing on hybrid, neighborhood and urban electric vehicles, as well as hydrogen-powered internal combustion engine vehicles. (The Advanced Vehicle Testing Activity is a DOE activity within the FreedomCAR and Vehicle Technology Program.) The Advanced Vehicle Testing Activity performs unbiased baseline performance testing to provide benchmark data for technology modeling and research and development programs, as well as to help fleet managers and other vehicle purchasers make informed purchase and operations decisions.

For more information on the program and its testing methods, visit the Advanced Vehicle Testing Activity Web page http://avt.inl.gov, or contact James Francfort at James.Francfort@inl.gov, (208-526-6787).

— INL —

05-032

News Release Archive